

ABSTRACT OF THE DISCLOSURE

[1117] The present invention relates to a computer graphics processing system, a memory and a method for use in connection with the computer graphics processing system. In one embodiment, the computer graphics processing system includes a graphics processor and a computer memory responsive to the graphics processor. The computer memory includes an image depth buffer and a hierarchical image depth buffer. The hierarchical image depth buffer contains data items that identify a nearest depth value and a farthest depth value for a plurality of image depth buffer entries associated with a plurality of corresponding pixels. In one embodiment, the method is for use in rendering a portion of an object onto a two-dimensional image plane. A disclosed method includes the steps of identifying a selected pixel corresponding to the portion of the object to be rendered, reading data items from a hierarchical image depth buffer, and performing a comparison between the selected pixel and the data items to make a pixel visibility determination. The data items include a near depth value and a far depth value. The hierarchical image depth buffer is associated with a plurality of depth values for a set of pixels where the set of pixels includes the selected pixel.